

# CALL FOR PAPER

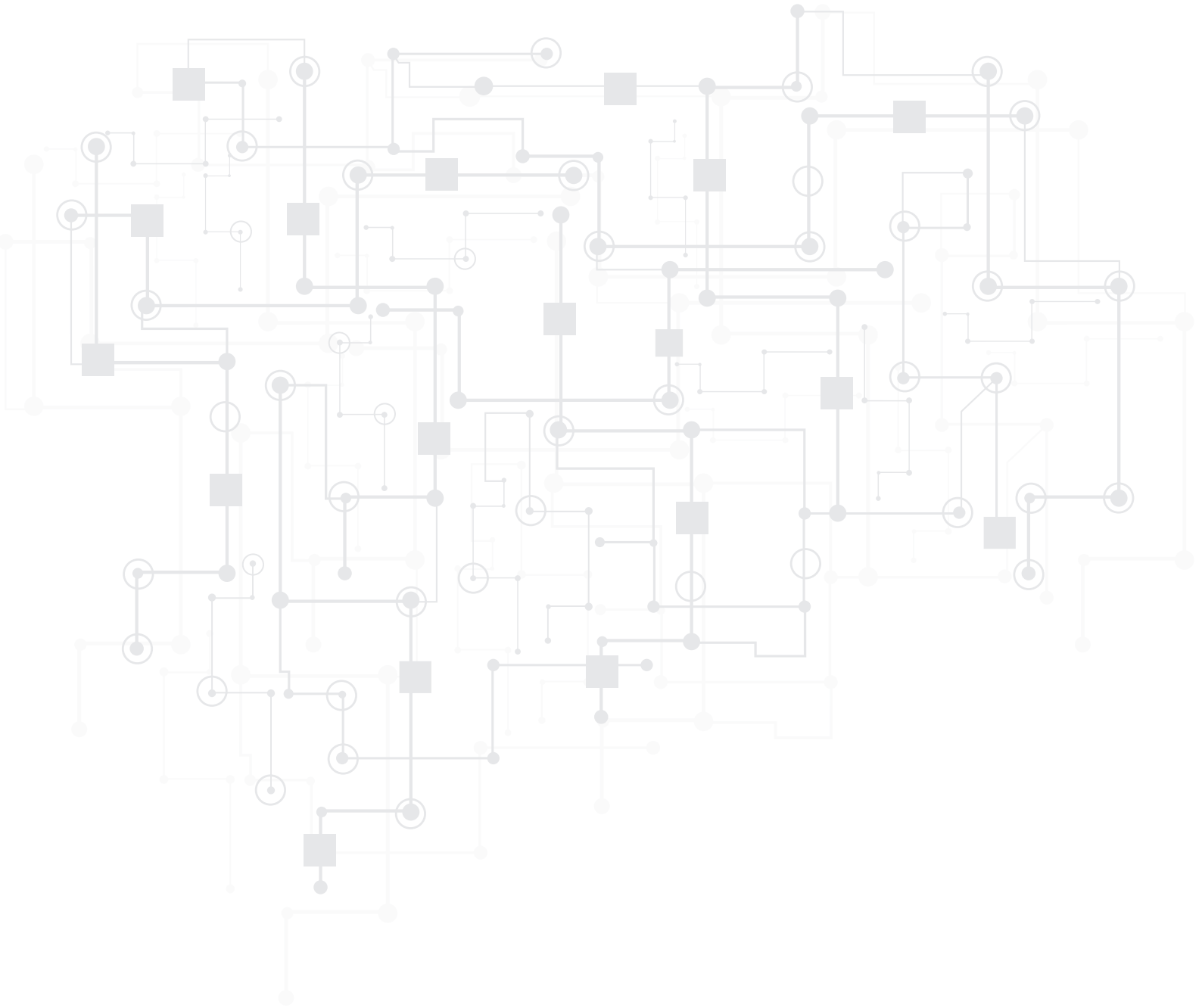
International Conference on Information Technology  
Applications and Systems (ICITAS)

**“Managing Digital Development  
for Sustainable Economy”**

**FEBRUARY 3, 2018**

Institut Bisnis dan Informatika  
Stikom Surabaya

Organized and  
Supported by:



ISBN 978-602-51367-0-2



---

**TABLE OF CONTENT**

A. EDITORIAL BOARD	i
B. COMMITTEE	iii
C. TOPIC	iv
D. FOREWORD	vi
E. KEYNOTE SPEAKER	vii
F. TABLE OF CONTENT	xi

**I. INFORMATION AND COMMUNICATION TECHNOLOGY**

1. A Fast Fourier Transform-based ECG Security Framework <b>Jusak, Seedahmed S. Mahmoud</b>	I-1
2. Analysis of Quality of Service Routing Protocols AODV and AOMDV on MANET Using NS2 <b>Alamsyah, Eko Setijadi, I Ketut Eddy Purnama, Mauridhi Hery Purnomo</b>	I-6
3. Application Evaluation of Simulation of Agribusiness Concept of Livestock (SPEKTRUM) at SMK Al Jauhar Ngawi, East Java <b>Marya Mujayana, Endra Rahmawati</b>	I-11
4. Building The Network Infrastructure and E-Hospital Using Cloud Computing <b>Norma Ningsih, Teguh Sutanto, Anjik Sukmaaji</b>	I-15
5. Comparison between PID and Fuzzy Controller to Hydroponic Temperature <b>Yosefine Triwidyastuti, Ira Puspasari, Harianto</b>	I-21
6. Comparison of Retina Blood Vessel Segmentation Based On K Means and Fuzzy C Means <b>Agus Dwi Churniawan</b>	I-28
7. Design of SLM IT Services on Academic Services in Higher Education <b>Erwin Sutomo</b>	I-32
8. IbM (Science and Technology for Society): Electronic Game Device Implementation To Train the Memories of Kids in Playing Group <b>Weny Indah Kusumawati, Pauladie Susanto, Musayyanah</b>	I-36
9. Implementation Of Online Sales Information System For Sandals Craftsmen In Berbek Village <b>A.B. Tjandrarini, Sulistiowati, Julianto Lemantara</b>	I-41
10. Implementation Text Mining for Recommendation Follow Up Customer <b>Vivine Nurcahyawati</b>	I-46
11. Iris Detection and Localization Based on Contrast Shrinking and Stretching of CIELab Color <b>Susijanto T. Rasmana, Pauladie Susanto, Heri Pratikno</b>	I-49
12. Lead Time Reduction Through Production Process Analysis Of XYZ E-Commerce Company Using Simulation Model <b>Fabio Jeremia Sunarjo, Mursyid Hasan Basri</b>	I-54

- 
13. N-TEA (New-Text Encryption Algorithm) For Android Chatting Application Security I-62  
**Sugiyanto**
  14. Scheme Of Application Study Of Kanji Characters Japan To Children Base On Android I-67  
**I Gusti Ngurah Alit Widana Putra, Yoppy Mirza M., Dinastuti Mulia L.**
  15. Pareto Analysis for Agile Requirements Prioritization I-72  
**Tan Amelia**
  16. Sentiment Classification of Microblogging in Indonesia Airline Services using Support Vector Machine I-76  
**Tien Rahayu Tulili, Muhammad Farman Andrijasa**
  17. The Analysis Of Service Quality At Academic And Student Affairs Department (Asa Department) Institute Of business And Informatics Stikom Surabaya I-82  
**Sulistiowati, Henry Bambang Setyawan, Tutut Wuriyanto**
  18. Evaluation of User Experience in Using Web-based Study Planning Application I-87  
**Tri Sagirani, Puspita Katikasari, Nunuk Wahyuningtyas**
  19. The Comparation of The Duration of Five Software to Restore The Operating System I-91  
**Achmad Arrosyidi, Edo Yonatan Koentjoro**
  20. Twitter Mining to Explore Perceptions of Tourism Objects in Indonesia: A case study of Borobudur and Prambanan Temple I-94  
**Valentinus Roby Hananto**
  21. User Evaluation GKJW Waru's Website for Improving Brand Awareness I-98  
**Siswo Martono, Florens Debora Patricia**
  22. Utilizing ADDIE Model for Developing Brilian, Learning Application in Institute of Business and Informatics Stikom Surabaya, Indonesia I-105  
**Bambang Hariadi, M.J. Dewiyani Sunarto, Pantjawati Sudarmaningtyas**

## II. DIGITAL MEDIA TECHNOLOGY IN ARTS DESIGN

1. Collaboration Between Designers And Marketers In Developing A New Product Development II-1  
**Yosef Richo Adrianto**
2. Content Analysis Television Program Featured on Disability by Title "Dunia Tanpa Batas" (Episode Tiara Handycraft Embracing Persons with Disabilities With Social Entrepreneurs ) II-5  
**Novan Andrianto, Rike Verlita, Fuad Amsyari**
3. Design Product Packaging Chocolate Using With Design Element Inside It II-9  
**Yosef Richo, Ixsora Gupita Cinantya, Ardian Jaya Prasetya**

- 
4. Environmental Graphic Design Of Ecotourism Mangrove Surabaya As Efforts To Provide Information To Visitors II-17  
**Hardman Budiardjo, Dhika Yuan Yurisma, Darwin R. Yuwono**
  5. Making A Short Film With The Thriller Genre Using Canted Angle Techniques About Psychopates Titled Hate II-24  
**Karsam, Nirwana Wahyu, Puspita Prawiswari**
  6. Multimedia as a Media Development Skill to Improve the Quality of Learning II-31  
**Ardian Jaya Prasetya**
  7. Song Arrangement Can You Feel The Love Tonight Using Sibelius On Movie Soundtrack "The Lion King" II-35  
**Yunanto Tri Laksono**

### III. BUSINESS AND ECONOMICS APPLICATIONS

1. Analysis the Impact of Management Information System Usage on the Performance of Business Company Using DeLone And McLean Model III-1  
**Haryanto Tanuwijaya**
2. Effect Of Mobile Technology, Information Services, Price, Company's Integrity Of Shopping On Line III-7  
**Antok Supriyanto**
3. Framework Business Model on Private College Using Business Model Canvas: Case Study in Institute of Business and Informatics Stikom Surabaya III-10  
**Ayouvi Poerna Wardhanie**
4. Science And Technology For Communities: Internet Utilization For Brand Rejuvenation Of Al Qur'an Al Falah Institution III-14  
**Achmad Yanu Alif Fianto, Rudi Santoso, Abdullah Khoirriqoh**
5. The Effect Of Big Five Personality On Lectures And Employee's Performance III-19  
**Sri Suhandiah, Ayuningtyas, Oktaviani**
6. The Effect Of Motivation And The Work Environment To Competence And Performance Of Permanent Lecturerat Sekolah Tinggi Teknologi Angkatan Laut Surabaya III-25  
**Rahayu Arya Shintawati**
7. The Influence of Brand Trust, Brand Communication and Brand Satisfaction toward Brand Loyalty for iPhone's Customer in Surabaya, East Java, Indonesia III-32  
**Achmad Yanu Alif Fianto**
8. The Management Of Online-Based Supply Of GoodsAt Pt.Indoberka Investama III-36  
**Mochammad Arifin, Marya Mujayana**
9. Science And Technology For Communities: Martketing Strategic Development and Packaging Design for Kelompok Tani Elok Mekarsari Surabaya III-42  
**Candraningrat, Yosef Richo Adrianto, Januar Wibowo**

- 
- |     |  |        |
|-----|--|--------|
| 10. | Analysis of Public Trust Factors on Online Media of Travel Website<br><b>Putri Pradnyawidya Sari</b> | III-47 |
| 11. | Clicking For Physical Security, Can It Be?<br><b>Cakti Indra Gunawan, Putriyana Asmarani</b>         | III-53 |

# The Comparation of The Duration of Five Software to Restore The Operating System

Achmad Arrosyidi

Associate's Degree of Information System,  
Faculty of Technology And Informatics,  
Institute of Business and Informatics Stikom Surabaya,  
Surabaya, Indonesia  
achmad@stikom.edu

Edo Yonatan Koentjoro

Associate's Degree of Information System,  
Faculty Of Technology And Informatics,  
Institute of Business and Informatics Stikom Surabaya  
Surabaya, Indonesia  
edo@stikom.edu

**Abstract** - In order to do back up and restoration in the computer lab, the technician usually does the clone technique to create an image file. In this research, it aims to test the comparison of the duration of five backup software to restore the operating system. For retrieving data, this research goes through the three stages: hardware, software, and instruments. Testing backups, verifying and restore are recorded in the process analysis. Then, the results are grouped based on the duration of each category, followed by sorting process from the fastest to the lowest.

**Keywords:** Computer; Backup; Restore; Application; Time; Duration; Restoration

## I. INTRODUCTION

Back up and restoration process in the computer lab usually be done manually. The technician usually does the clone technique to create an image file. There are two ways to do it: offline and online mode. In online mode, back up and restoration will be time-consuming depends on how big data that will be recovered. Also, the network should be stable. Otherwise, it will be a damage to the data and the software that included. For this reason, offline mode for backup and restoration should be considered. In offline mode, there is so many backup software. However, the technician should understand which software that is good enough to handle their problem.

Based on this problem, the authors find five backup software that met the requirements. This research aims to help the technician to find the matching software and compare how long the five software works and find the fastest one. For five software, it will be done using the flash drive that has been installed the backup software and make it a bootable USB. For retrieving data, this research goes through the three stages: hardware, software, and instruments. Testing backups, verifying and restore are recorded in the process analysis. Then, the results are grouped based on the duration of each category, followed by sorting process from the fastest to the lowest. In conclusion, Clonezilla is the fastest software to restore the data. Even though, it needs more research to compare the five software with another similar software.

Backup and Synchronization

Backup is a method that does copy a file to another. Synchronization cannot be released when someone does backup files using more than one computer. Synchronization software ensures user to receive the same results of backup as well as they expect. If there is a modification of the backup file, it will affect simultaneously and automatically for each destination file although there is a different operating system [1].

## Quality Aspects Of Service

There are 10 aspects of service quality: (1) tangible, (2) reliability, (3) responsiveness, (4) competency, (5) courtesy, (6) credibility, (7) security, (9) communication, and (10) understanding the customer. These aspects determine the quality of customers satisfaction.

The cause of failure in the service quality between customer and provider perceptions is divided by five gaps: (1) between the expected service quality and provider perceptions for user expectations; (2) between the service quality and user perception; (3) between the result of services and service quality specifications; (4) between

the result of services and the value of the user's external communication; and (5) between perceived and expected services [2].

## Operating System Configuration

In general, the operating system provides some basic functions, such as file management, working on the files and configuration system . Configuration can be done by CUI (Character User Interface) or based on GUI (Graphical User Interface) [3].

## Software Backup

There is five backup software that commonly used: Norton Ghost, Macrium Reflect, Active Disk Image, Clonezilla, and DriveImage XML.

## II. RESEARCH METHODS

This research will go through several steps, i.e.:

1. Preparation, population selection, and record the specification of computers as a test tool. Install the operating system, drivers and restore apps. Create and print tables to

record test-related the data. Perform backup drive C that contains operating systems and applications by recording backup results in the backup software, such as backup duration, backup file capacity, backup methods.

2. Testing, doing the image partition including the operating system. Perform the restoration test using five software.
3. Data retrieval, recording the restoration time, from the beginning to the end and the duration of each software.
4. The analysis aims to find out the fastest duration of any software used.
5. Conclusion making, collecting the results of the analysis to receive the fastest duration of any software restoration then interpret the results of data analysis to make conclusions.

### III. RESULTS

The results for this research will be grouped into three parts:

#### 1. Backup

Table 1 shows the rank of the backup time and Figure 1 shows the graphic.

TABLE 1. RANK OF THE BACKUP DURATION

Backup Time (second)	Software
451	Clonezilla
563	Active Disk Image
720	Macrium Reflect
909	DriveImage XML
939	Norton Ghost

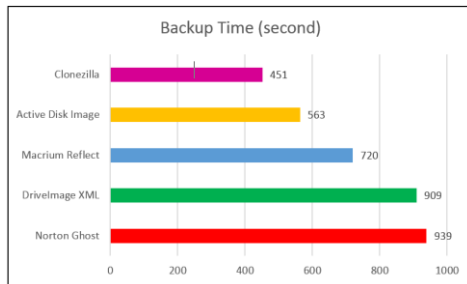


Fig 1. the graphic for the rank of the backup time.

Based on the backup time, table 2 shows the rank of the total file size of the backup process.

TABLE 2. RANK OF THE TOTAL FILE SIZE OF THE BACKUP PROCESS

Total File Size (byte)	File Location	File Name	Software	Desc
7.715.865,374	D:\2017-08-02-17-img	Noname. Formed into 18 files	Clonezilla	No compression
14.488.276,992	D:\image 16Gb	02082017.adi	Active Disk Image	

Total File Size (byte)	File Location	File Name	Software	Desc
14.950.288,805	D:\image 16Gb\1 - Norton Ghost	02082017.gho	Norton Ghost	
17.698.435,000	D:\image 16Gb\3 - Macrium Reflect	A134B59A38FB034B-00-00.mrimg	Macrium Reflect	
18.137.526,467	D:\image 16Gb\6 - DriveImage XML	Drive_E.xml	DriveImage XML	

#### 2. Verifying

Table 3 shows the rank of the verifying Time and Figure 2 shows the graphic.

TABLE 3. RANK OF THE VERIFYING DURATION

Verifying Time (second)	Software
9	Active Disk Image
164	Clonezilla
233	Norton Ghost
-	Macrium Reflect
-	DriveImage XML

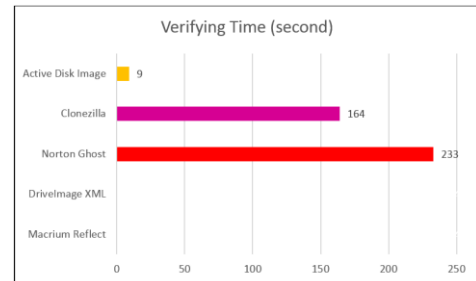


Fig 2. the graphic for the rank of the verifying time.

#### 3. Restoration

Table 4 shows the rank of the restoration time and Figure 3 shows the graphic.

TABLE 4. RANK OF THE RESTORATION DURATION

Restoration Time (second)	Software
451	Clonezilla
690	Active Disk Image
740	Norton Ghost
1.080	Macrium Reflect
1.136	DriveImage XML





Fig 3. the graphic for the rank of the restoration time.

Through three parts, the explanation is provided below.

1. The backup group aims to ensure each test has been succeeded creating image files. The fastest backup is Clonezilla.
2. Verification group aims to ensure the image file is valid. The fastest verification is Active @ Boot Disk (ver. 10.5.0).
3. Restoration group aims to extract image file to partition or drive C that contains an operating system, driver, and software. The fastest restoration is Clonezilla.

#### IV. CONCLUSION

Based on the data results, it can be concluded Clonezilla is the fastest for the restore process and any other features. Even though, it also needs more research to compare the five software with another similar software and another parameter.

#### REFERENCES

- [1] Westover, B., 2013. *How to Clone a Hard Drive*. [Online] Available at: <http://www.pcmag.com/article2/0,2817,2421302,00.asp>
- [2] Zeithaml, A. V., 1990. *Delivering Service Quality: Balancing Customer Perceptions and Expectations*. New York: The Free Press.
- [3] Suyanto, A. H., 2015. *DOS (DISK OPERATING SYSTEM)*. [Online] Available at: <http://www.jurnalkomputer.com/attachments/article/123/OS%20DOS.pdf>
- [4] Anon., 2017. *About - Clonezilla*. [Online] Available at: <http://clonezilla.org/>
- [5] Anon., 2017. *About Macrium*. [Online] Available at: <https://www.macrium.com/our-story>
- [6] Anon., 2017. *Active Active Disk Image*. [Online] Available at: <http://www.disk-image.com/>
- [7] Anon., 2017. *Macrium Reflect 7*. [Online] Available at: <https://www.macrium.com/version-7>
- [8] Symantec, 2009. *Norton Ghost 15.0 User's*. California: Symantec Corporation.

# CALL FOR PAPER

## International Conference on Information Technology Applications and Systems (ICITAS) 2018

### EDITORIAL BOARD

#### EDITOR-IN-CHIEF

Dr. M.J. Dewiyani Sunarto

#### PUBLISHING EDITOR

Norma Ningsih, S.ST., M.T.

Marya Mujayana, S.S., M.M.

Valentinus Roby Hananto, S.Kom., M.Sc.

#### TECHNICAL COMMITTEE

Tutut Wuriyanto, M.Kom.

Dr. Achmad Yanu Alif Fianto, S.T., MBA.

Tri Sagirani, S.Kom., M.MT.

Karsam, M.A., Ph.D.

#### REVIEWER

#### INFORMATION AND COMMUNICATION TECHNOLOGY :

Prof. Dr. Mauridhi Hery Purnomo, M.Eng

**Institut Teknologi Sepuluh Nopember**

Prof. Dr. Sarjon Defit, M.Sc

**Universitas Putra Indonesia Padang**

Prof. Dr. Budi Jatmiko, M.Pd

**Institut Bisnis dan Informatika Stikom Surabaya**

Dr. Rahma Mochtar

**Universiti Malaysia Pahang**

Dr. Nai-Wei Lo

**National Taiwan University of Science and Technology**

Dr. Jusak

**Institut Bisnis dan Informatika Stikom Surabaya**

Dr. Anjik Sukmaaji, M.Eng

**Institut Bisnis dan Informatika Stikom Surabaya**

Dr. Susijanto Tri Rasmana, MT

**Institut Bisnis dan Informatika Stikom Surabaya**

Dr. Bambang Hariadi, M.Pd

**Institut Bisnis dan Informatika Stikom Surabaya**

Dr. MJ Dewiyani Sunarto

**Institut Bisnis dan Informatika Stikom Surabaya**

Dr. Seedahmed Mahmoud

**Technical College Riyadh, Saudi Arabia**

Roy Laurens, M.Sc.  
**University Of Central Florida, USA**  
Dr. I Gusti Made Sanjaya, M.Si  
**Universitas Negeri Surabaya**

**DIGITAL MEDIA TECHNOLOGY IN ARTS DESIGN :**

Prof. Othman Yatim  
**University of Malaya, Malaysia**  
Karsam, MA., Ph.D  
**Institut Bisnis dan Informatika Stikom Surabaya**  
Dr. Bramantyo  
**Sekolah Tinggi Kesenian Wilwatikta**  
Dr. Listia Natadjaja, S.T., M.T., M.Des  
**Universitas Kristen Petra**

**BUSINESS AND ECONOMICS APPLICATIONS :**

Dr. Antok Supriyanto, M.MT  
**Institut Bisnis dan Informatika Stikom Surabaya**  
Dr. Haryanto Tanuwijaya, S.Kom., M.MT  
**Institut Bisnis dan Informatika Stikom Surabaya**  
Dr. Januar Wibowo, MM  
**Institut Bisnis dan Informatika Stikom Surabaya**  
Dr. Achmad Yanu Alifianto, MBA  
**Institut Bisnis dan Informatika Stikom Surabaya**  
Prof. Dr. Mohammad Tajudin  
**STMIK Bumigoro Mataram**  
Dr. Hary Susanto  
**Universitas Dipenogoro**  
Dr. Rian Johnly Pio  
**Universitas Sam Ratulangi**  
Prof. Dr. Ryananto Sarno, M.Sc  
**Institut Teknologi Sepuluh Nopember**

ISBN : 978 – 602 -51367 – 0 – 2

Content of paper beyond the responsibility of editors and publishers.  
Publisher : **Institute of Business and Informatics Stikom Surabaya**  
Office : Gedung Institut Bisnis dan Informatika Stikom Surabaya  
Jl. Raya Kedung Baruk 98, Surabaya 60298  
Telp. 031 - 8721731, Fax. 031 - 8710218  
Website: <http://icitas.stikom.edu>

First Print, *February 2018*  
Copyright © 2018 on Author

Copyright is protected by law. No part of this book may be reproduced or transmitted in any form, electronic or mechanical, including photocopying, recording or other storage systems, without the writte

## COMMITTEE

### International Conference on Information Technology Applications and Systems (ICITAS) 2018

Referrer	: 1. Rector Institut Bisnis dan Informatika Stikom Surabaya Prof. Dr. Budi Jatmiko, M.Pd 2. Rector Universitas Teknologi Nusantara Dr. Usman Mulyadi, M.Kes., M.Si.
Person in Charge	: Pantjawati Sudarmaningtyas, S.Kom., M.Eng
General Chair	: Dr. Jusak
General Co-Chair I	: Dr. Bambang Hariadi, M.Pd
General Co-Chair II	: Dr. Drs. Antok Supriyanto, M.MT.
General Secretary	: Dr. M.J. Dewiyani Sunarto
Secretary I	: Norma Ningsih, S.ST., M.T.
Secretary II	: Marya Mujayana, S.S., M.M.
Secretary III	: Valentinus Roby Hananto, S.Kom., M.Sc.
Treasure I	: Lilis Binawati, S.E., M.Ak
Treasure II	: Yuvita, SE
Treasure III	: Yuli Setiyo Suryo Andari, AP., S.Kom
Event Organizer I	: Dr. Haryanto Tanuwijaya, S.Kom., M.MT.
Event Organizer II	: Dr. Anjik Sukmaaji, S.Kom., M.Eng
Technical Comitee I	: Tutut Wuriyanto, M.Kom.
Technical Comitee II	: Dr. Achmad Yanu Alif Fianto, S.T., MBA.
Technical Comitee III	: Tri Sagirani, S.Kom., M.MT.
Technical Comitee IV	: Karsam, M.A., Ph.D.
Documentation	: Novan Andrianto, M.I.Kom
Publication I	: Sugiharto Adhi Cahyono, S.Ds.
Publication II	: Julianto Lemantara, S.Kom., M.Eng.
Infrastructure I	: Dr. Susijanto Tri Rasmana, S.Kom., MT.
Infrastructure II	: Dr. Januar Wibowo, S.T., M.M.
Infrastructure III	: Indra Gunawan, S.T.

---

## TOPIC

### **Track 1. Information and Communication Technology**

- Computer Network and Architecture
- Computer Security and Digital Forensic
- Data Mining and Big Data and Analysis
- Distributed System
- E-health Services and Biomedical/Bioinformatics Applications
- Electronic Learning Model and Applications
- Enterprise Information System
- Emerging Wireless and Mobile Applications
- Geographic Information System (GIS)
- High Performance Computing
- Human-Computer Interaction
- Image Processing
- Industrial Computer Control
- Information Security and Risk Management
- Information Technology Services and Management
- Intelligent System
- Knowledge Data Discovery
- Modelling and Simulation
- Multimedia QoS and Traffic Management
- Parallel Programming
- Pattern Recognition
- Remote Sensing
- Ubiquitous System
- Web Analytics
- Wireless Sensor Networks

### **Track 2. Applications of Digital Media Technology in Arts Design**

- Computer Graphics and Design
- Digital Animation
- Digital Media Technology
- Digital Game Design
- Film and Video
- Multimedia Applications on Arts and Design
- Visual Communication Design and Knowledge Media

### **Track 3. Business and Economics Applications**

- Business and Public Administration Information System
- Business and Information Technology Allignment
- Business Intelligence
- Business Process Management

- 
- E-Business
  - Integration of Data and Processes
  - Management Information System
  - Supply Chain Processes

---

## FOREWORD

We welcome you to the First International Conference on Information Technology Applications and Systems (ICITAS) held February 3, 2018 in Surabaya, East Java, Indonesia. ICITAS 2018 provides a highly competitive forum for global exploration of the latest developments in Information Technology and their direct impact on the economic sustainability. Therefore, we carefully chose and embraced the theme of this conference as “Managing Digital Development for Sustainable Economy”.

We are pleased to present the proceedings of the conference as its published record. In overall, the technical committee has selected 40 papers to be published, which comprises authors from various countries and regions. The topics may include, but not limited to the following: Information and Communication Technology, Business and Economics Applications, and Applications of Digital Media Technology in Arts Design.

We want to express our gratitude to the members of the Program Committee and the Technical Committee, as well as the external reviewers for their hard work in reviewing all the submission papers. We also thank the three invited speakers, Prof Nai-Wei Lo (National Taiwan University of Science and Technology), Prof. Kamarul Hawari bin Ghazali (Universiti Malaysia Pahang), and Mr. Kresnayana Yahya, for sharing their insights with us. Finally, the conference would not be possible without the excellent papers contributed by authors. We thank to all the authors for their contributions and their participation in ICITAS 2018! We hope that this program will further stimulate research in Information Technology systems and their applications in the present time and in the future, and provide practitioners with better techniques, algorithms, and tools for deployment.

Dr. Jusak

Head of Committee of the ICITAS 2018